شرکت فني مهندسي
توان‌آزمايان

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Germi Water treatment Plant

Client: Ardabil Regional Water company

Started in 2006 and handed over in 2008

The water treatment plant of Germi with the capacity of 300 lit/sec is executed for Germi Town located in Ardabil province at the north west of Iran and consists of following sections

1. Intake - the water is drawn to the treatment plant from Moghan irrigation channel by 4 pump stations. In the last stage the water is fed to the treatment plant by gravity from a reservoir behind the treatment plant:

2. Rapid Mixing - The water arrives at the treatment plant into two rapid mixing pools each with the capacity of 3.375 m3, where coagulants (that cause fine particles to clump together, forming "floc") are added. This mixing disperses the coagulants throughout the water and starts the coagulation process

3. Slow Mixing - The water then passes through four flocculation pools in three steps each with the capacity of 33.075 m3 , where it is gently mixed. This causes the particles to come together and form larger floc.

4. Sedimentation - The water next enters the sedimentation basin. The floc settles to the bottom of the basin having the dimensions of 48x16x7.5 m to remove the impurities from the water. The water then proceeds to the filtration stage.

5. Filtration –From the sediment basin, the water flows through 12 units of pressure filters. As the water passes through the filter, impurities stick to the filter material

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6. Backwash system-the filters are washed by a backwash system consisting of 2+1 units of centrifugal electro pumps with the capacity of 200 m3/s and 1+1 blowers with the capacity of 1300 m3/hour .

7. Recovery water –The recovery water of backwash system is returned to the rapid mixing pool via a recovery pool having the dimension of 3x8x9.5 m and equipped with 1+1 units of submersible electro pumps with the capacity of 250m3/hour.

8. Disinfection& Chemicals – Now that impurities have been removed from the water, chlorine is added as a disinfectant. This ensures that the water is safe and prevents bacteria from developing as it travels from the treatment plant to the consumer. It should be mentioned that the chemicals materials such as Lime, Feric chlorite, Poly electrolite are injected in different sections to improve the PH of the incoming water as well as causing the particles to come together and form floc.

9. Distribution - The finished water is stored at the plant in two reservoirs with the capacity of 2000 m3 from where it is drawn to the city reservoir by relevant pump station with the capacity of 270 lit/s.

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